

**AMENDMENTS TO THE CLAIMS**

The following is a complete, marked-up listing of revised claims with a status identifier in parenthesis, underlined text indicating insertions, and strike through and/or double-bracketed text indicating deletions.

**Listing of Claims**

1. (Currently Amended) A paper- or a cardboard-based security product, ~~which comprises~~comprising:  
  
    at least one of a paper product or and a cardboard product; ~~which is equipped with~~  
  
    a detectable security symbol ~~which can be detected~~ provided to layer of the at least one of the paper and the cardboard product, characterized in that the security symbol ~~layer comprises including~~ including [[a]] an electrically conductive polymer layer in the product, which layer consists of a synthetic, electrically conductive polymer, the electrical conductivity of which the layer has been being locally changed ~~changeable~~ to form a figure ~~security symbol pattern~~ that is one of electrically conductive or, alternatively, electrically non-conductive, and  
  
    a figure on a ~~the surface of the~~ at least one of the paper and ~~the cardboard product is provided with a figure, the figure being designed to indicate~~ which indicates the presence of the security symbol.

2. (Currently Amended) A product according to claim 1, ~~characterized in that~~ wherein ~~the security symbol comprises a layer that is formed by an electrically conductive polymer that is~~ the layer is fitted below the ~~a surface layer of the~~ at least one of the

paper ~~or~~ and the cardboard product.

3. (Currently Amended) A product according to claim 1, ~~characterized in that~~wherein the electrically conductive polymer comprises an independently electrically conductive polymer that ~~can be~~ is doped ~~in order to~~ generate charge carriers.

4. (Currently Amended) A product according to claim 3, ~~characterized in that~~wherein the layer ~~containing~~ including ~~an~~ the electrically conductive polymer is one of rendered locally non-conductive by dedoping the polymer with an alkali solution or ~~[[.]] alternatively,~~ rendered locally conductive by doping the polymer with an acid solution containing a doping agent.

5. (Currently Amended) A product according to claim 1, ~~characterized in that~~wherein the security symbol comprises a bar code.

6. (Currently Amended) A product according to claim 1, ~~characterized in that~~wherein the layer ~~comprising~~ including an electrically conductive polymer layer is identifiable on the basis of at least one of its electrical conductivity ~~or the colour and color of the layer or a combination of these.~~

7. (Currently Amended) A product according to claim 6, ~~characterized in that~~wherein ~~it becomes evident from the figure on the surface of the~~ at least one of

the paper product ~~or~~ and the cardboard ~~surface~~ product is designed to indicate where to establish ~~how~~ the electrical conductivity of the security symbol ~~can be established~~.

8. (Currently Amended) A product according to claim 7, ~~characterized in that by using a figure on~~ wherein the surface of the at least one of the paper ~~or~~ and the cardboard product includes at least two points ~~have been~~ marked on the surface in such a manner that the electrical conductivity between these two points forms the security symbol of the product.

9. (Currently Amended) A product according to claim 7, ~~characterized in that~~ wherein the figure comprises at least one of text ~~or~~ and a graphic symbol.

10. (Currently Amended) A product according to claim 1, ~~characterized in that~~ wherein the figure, ~~besides indicating the security symbol, also~~ is configured to provide ~~provides the~~ at least one of a product description ~~or~~ and the directions for use of the at least one of the paper ~~or~~ and the cardboard product ~~or~~ and a product included ~~in~~ therein.

11. (Currently Amended) A product according to claim 1, ~~characterized in that~~ wherein the ~~electrically conductive polymer layer~~ is includes at least of one of a polyaniline, a polypyrrolidine ~~or~~ and a polythiophene.

12. (Currently Amended) A method of manufacturing a paper- or a cardboard-based security product, ~~according to which method~~ comprising:

providing at least one of a paper product and ~~or~~ a cardboard product;

~~providing is provided with~~ a detectable security symbol to a layer of the at least one of the paper product and the cardboard product, which can be detected,  
~~characterized in that a~~ the layer comprising an electrically conductive polymer ~~is fitted in the product,~~ the electrical conductivity of the electrically conductive polymer ~~in the layer is~~ being one of locally changed to form an electrically conductive or, ~~alternatively,~~  
locally changed to form an electrically non-conductive figure ~~security symbol pattern,~~  
and

equipping the at least one of the paper product and ~~or~~ the cardboard ~~product~~ surface is equipped with a visual mark which indicates configured to indicate  
the presence of ~~a~~ the layer that comprises ~~an~~ the electrically conductive polymer.

13. (Currently Amended) A method according to claim 12, ~~characterized in that~~ further comprising changing the electrical conductivity of the polymer ~~is changed~~  
by one of doping the electrically non-conductive polymer or, ~~alternatively,~~ by dedoping  
the electrically conductive polymer.

14. (Currently Amended) A method according to claim 13, ~~characterized in that~~ wherein the electrically non-conductive polymer is doped by treating the polymer layer with an acid solution, which is used to paint a desired figure on the surface of  
the at least one of the paper product and ~~or~~ the cardboard product.

15. (Currently Amended) A method according to claim 13, ~~characterized in that~~wherein the electrically conductive polymer is dedoped by treating the polymer layer with an alkali solution, which is used to paint a desired figure on the surface of the at least one of the paper product and~~or~~ the cardboard product.

16. (Currently Amended) A method according to claim 13, ~~characterized in that~~wherein the electrically conductive polymer is doped by printing a desired figure on the surface of the at least one of the paper product and~~or~~ the cardboard product using printing ink ~~which is capable either of one of~~ doping or dedoping the electrically conductive polymer.

17. (Currently Amended) A method according to claim 12, ~~characterized in that~~further including fitting the security symbol ~~comprises a layer fitted below the surface layer of the~~ at least one of the paper and~~or~~ the cardboard product, said layer being formed by the electrically conductive polymer, in which case, in order to dope or, alternatively, dedope the polymer, an acid or, alternatively, an alkali solution is absorbed through the surface layer of the paper or the cardboard product.

18. (Currently Amended) A method according to claim 12, ~~characterized in that~~further including printing a figure, ~~from which it becomes evident how the electrical conductivity of the security symbol can be established, is printed~~ on the at least one of the paper~~or~~and the cardboard surface product, the figure indicating where

to establish the electrical conductivity of the security symbol.

19. (Currently Amended) A method according to claim 17, ~~characterized in that~~further including printing on the surface of the at least one of the paper product and or the cardboard product a figure is printed in by which at least two points have been marked, such that the electrical conductivity between ~~these~~the two points forms the security symbol of the product.

20. (Currently Amended) A method of confirming the authenticity of a security product, comprising~~according to which method~~

providing one of a paper product or a cardboard product provided with having a detectable security symbol, which can be detected, is used as a security product, and confirming the authenticity by identifying electrical conductivity of the paper product or the cardboard product at a location of the security symbol, characterized in that wherein a layer of the paper product or the cardboard product comprises~~comprising a synthetic, an~~ electrically conductive polymer, the electrical conductivity of which has been locally changed to form one of an electrically conductive or, ~~alternatively, non-conductive figure, is formed in the product~~security symbol pattern, and the authenticity of the security product is confirmed by identifying the electrical conductivity of the paper or the cardboard product at the location of the security symbol.

21. (Currently Amended) A method according to claim 20, ~~characterized in~~

~~that~~wherein a figure indicating the presence of a the security symbol is fitted onto the surface of the paper product or the cardboard product, said figure showing ~~how~~ where to establish the electrical conductivity of the security symbol.

22. (Currently Amended) A method according to claim 20, ~~characterized in~~ ~~that~~wherein the electrically conductive polymer is doped by printing a figure on ~~the a~~ surface of the paper product or the cardboard products~~surface~~, using printing ink which is capable of one of doping or dedoping the electrically conductive polymer.

23. (Currently Amended) A method according to claim 20, characterized ~~in~~ ~~that~~wherein the authenticity of a the paper product or a the cardboard product is confirmed by treating a the security symbol with one of a doping or dedoping agent and by observing a change in the electrical conductivity of the security symbol.

24. (New) A method according to claim 12, further including forming said security symbol pattern by doping the polymer by absorbing an acid through the surface layer of the at least one of the paper product and the cardboard product.

25. (New) A method according to claim 12, further including forming said security symbol pattern by dedoping the polymer by absorbing an alkali solution through the surface layer of the at least one of the paper product and the cardboard product.